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ABSTRACT

This report summarizes a research project on the Child Development Associate (CDA) assessment and credentialing system. The issues covered in the report fall under two general categories: validity (the ability of the CDA assessment/credential system to identify competent child care staff) and career development potential (the benefits of the CDA system for child care staff). The term "CDA assessment/credential system" is said to comprise three distinct but related parts: a definition of competence, an assessment method and a credential. The study design included information about child care workers taken from interviews, ratings, and written assessments: content analysis of literature on child related occupations and case studies of the relationship of state regulations to the CDA assessment credential system. Validity findings included evidence regarding the competence of CDA participants: consistency of judgments in CDA assessment: access to and outcomes of the CDA assessment system. Career development findings included participants' personal and career history: a career ladder analysis: and a case study of two states' child care regulations. Limitations of the study were noted to include using indirect evidence to make decisions, using measurement concepts not applicable to the CDA assessment/credential process, ignoring participants' prior training experiences, and defining "competence" ambiguously. (Author/DB)

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COMPETENCE FOR CHILDREN'S SAKE

Summary Report of a Research Project on the Child Development Associate Credential

by Willa Bowman Pettygrove

Shirley C. Karas, Helen Raikes and Alice Woods made valuable contributions essential to the successful completion of this project. Rebecca Catherine Russelle of Lincoln, Nebraska, contributed the drawings for the report.

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Children and teacher play "Duck Duck Goose" at day care.

OVERVIEW

The CDA was proposed as one means to meet the growing need for qualified staff while enhancing career opportunities for those who work in child care (Zigler, 1971). This report summarizes a research project on the Child Development Associate (CDA[1]) assessment and credentialing procedure. The many child care professionals who have participated in CDA training and credentialing--as advisors, assessment team members, CDA candidates, employers of CDAs--will therefore look to the report for information which may relate to their experience.

The report may also be of interest to other child care professionals. The CDA has developed as one of many policies to improve the availability and quality of child care. Research on the CDA

1. Child Development Associate (CDA) is a registered trademark of the Child Development Associate Consortium Inc.

assessment/credential system has implications for broader questions about staff development and evaluation, child care regulations, and child care as a career.

The issues covered by this report fall under two general questions, which appear repeatedly in different forms throughout:

1. Does the CDA assessment measure what it was designed to measure? That is, in what ways are those who have earned the CDA credential competent child care staff?
2. What career benefits have resulted for those who have the CDA credential? What benefits might they expect in the future?

The CDA assessment/credential system is innovative in many ways and has experienced growing pains in the years of its development. Its innovations added to the usual limitations of research. The results of this research cannot provide final answers or absolute judgements, but they do provide a rich background for readers to review their own questions and experiences.

Throughout this report, the term "CDA assessment/credential system" will be used to refer to three distinct but related parts.

1. The CDA is a <u>definition of competence</u> for child care staff. This definition may be used as a standard or as the basis for tests of performance. It includes the six general competency statements, which in turn are defined by 13 more specific functional areas (Table 1).
2. The CDA is an <u>assessment</u>, a measurement method conducted by the CDA Consortium to determine if a child

Table 1

CDA Competencies and Functional Areas

Competencies	Functional Areas
1. Establishes and maintains a safe and healthy learning environment.	1. SAFE - Candidate provides a safe environment by taking necessary measures to reduce or prevent accidents.
	2. HEALTHY - Candidate provides an environment that is free of factors which may contribute to or cause illness.
	3. ENVIRONMENT - Candidate selects materials and equipment and arranges the room to provide an environment conducive to learning and appropriate to the developmental level of the children.
2. Advances physical and intellectual competence	4. PHYSICAL - Candidate provides a variety of appropriate equipment, activities and opportunities to promote the physical development of the children.
	5. COGNITIVE - Candidate provides activities and experiences which encourage questioning, probing and problem-solving skills appropriate to the developmental level of each child.
	6. LANGUAGE - Candidate helps children acquire and use language as a means of communicating their thoughts and feelings and understanding others.
	7. CREATIVE - Candidate provides a variety of experiences and media that stimulates children to explore and express their creative abilities.
3. Builds positive self-concept and individual strength.	8. SELF-CONCEPT - Candidate helps each child know, accept and appreciate herself/himself as an individual.
	9. INDIVIDUAL STRENGTH - Candidate helps each child develop a sense of independence and acquire the ability to express, understand and control her/his feelings.
4. Promotes positive functioning of children and adults in a group.	10. SOCIAL - Candidate helps the children learn to get along with others and encourages feelings of mutual respect among the children in the group.
	11. GROUP MANAGEMENT - Candidate provides a positive routine and establishes simple rules with the group that are understood and accepted by children and adults.
5. Brings about optimal coordination of home and center child rearing practices and expectations.	12. HOME-CENTER - Candidate establishes positive and productive relationships with parents and encourages them to participate in the center's activities.
6. Carries out supplementary responsibilities related to children's programs.	13. STAFF - Candidate works cooperatively with other staff members concerning plans, activities, policies and rules of the center.

care worker's performance conforms to the definition of CDA.

3. The CDA is a credential awarded to persons who meet the requirements of the assessment by giving evidence that they conform to the CDA competence definition.

The term "system" implies that the three parts must be considered as parts of a whole.

Historical Perspective for the Research

The idea for this research project arose in the fall of 1976, when the CDA assessment and credentialing system had been in use for almost two years. In the three years since that time, the system has grown and changed. A brief history of the development of the CDA should provide a good base for considering the design and results of the research project.

In 1971, the Administration for Children, Youth and Families (ACYF) began work on defining a new professional role, the Child Development Associate or CDA (Zigler, 1971). This new professional role was intended to fill a need in child care staffing patterns, and to recognize the ability of persons already working in child care centers. The CDA was defined as a middle level professional who can take responsibility for the day-to-day planning and supervision of a classroom of three- to five-year-old children. The credential was to be awarded on the basis of demonstrated ability, not education or experience.

Because the CDA credential is intended as evidence of individual competence, it is not to be interpreted as an evaluation of a training program or of a particular child care center. The goal of CDA competence is to foster "developmental child care". As Biber (1973) notes, this goal is broadly defined to allow for considerable variety in the sociocultural and economic contexts of child care.

The Child Development Associate Consortium (CDAC), a federally funded private organization which represents 20 professional child care organizations, defined six CDA competencies and developed the

assessment procedures. The competencies were developed by a task force of experts in child development with input from a survey of 1,200 child care professionals. Upon completion of the competency definitions in 1972, eighteen subcontractors developed preliminary assessment procedures. The intent was to develop an assessment that would apply in child care programs representing a variety of cultures, philosophies and administrative structures. The assessment was field tested and has been in use since 1975. To date, over 6,200 child care staff have earned the CDA credential through the Consortium.

The assessment procedure adopted by the Consortium was designed to measure competence as defined by the competencies and functional areas; it was also designed to accommodate the unique practical and philosophical features of child care programs (CDAC, 1976). The steps of the CDA assessment may be summarized as follows.

1. The Candidate meets eligibility requirements (based on minimal age and work experience requirements) and completes application forms. The Candidate selects two other assessment team members: an Advisor and a Parent-Community Representative. The Candidate is also designated as a team member.

2. The three assessment team members begin to collect material for use in the assessment. The Candidate organizes a portfolio of materials to document work in a center-based child care program. The Advisor observes the Candidate at work, consults and writes a summary of knowledge about the Candidate's child care work. The Parent-Community Representative observes the Candidate and collects questionnaires

from the parents of all children in the Candidate's group. Information from the observation and questionnaires are summarized.

3. When the Candidate indicates readiness, the CDA Consortium appoints a fourth assessment team member (called the Consortium Representative) and schedules the date for the assessment.

4. On the date of the assessment, the Consortium Representative observes the Candidate at work and conducts the assessment team meeting. The four assessment team members share pertinent information as each competency and functional area is reviewed. Although team members may disagree on particular criteria, there must be consensus (a unanimous vote) on the final judgement about overall competence. By sharing information, team members assist each other in the judgement process. Sharing and consensus are seen as ways to increase information about the Candidate, rather than as sources of bias.

5. The Consortium awards the credential to Candidates who have been voted competent and who have followed the required assessment procedures.

Readers wishing more information about the CDA assessment should refer to Consortium publications (e.g., CDAC, 1978).

Throughout this report, reference is made to the innovative features of the assessment. The Candidate is included in the assessment meeting and assists in the selection of other team members; the final decision about competence is made by a consensus within the team; judging for the assessment involves direct observation and

collection of evidence based on members' interpretation of the competencies and functional areas; members are chosen to represent very different points of view about the child care program and the performance of the CDA Candidate. Often researchers ask only how well a measurement system works in terms of the strict scientific definitions of reliability and validity. This report will also describe the ways in which the CDA system may work for humanistic and practical reasons.

While ACYF supported the credentialing effort by the Consortium, it also funded CDA training projects through pilot projects and the Head Start Supplementary Training Program. CDA training in general has represented innovations such as college credit for individualized, field based training, with recognition of life experience and demonstrated ability. Although many of the CDA participants in this study had access to CDA training, the content of their training is not a concern of this research. CDA training is not a prerequisite for earning the CDA credential. The research compares persons who have the CDA credential with persons who do not. It does not compare persons who have completed CDA training programs with others who have had different formal and informal learning experiences.

The Reason for This Study: The Value of Competence for Children and Their Caregivers

As used by the Child Development Associate Consortium, the term "competence" refers to work performance which meets a predetermined standard:

> "The Child Development Associate or CDA is a person able to meet the specific needs of a group of children in a child development setting by nurturing children's physical, social, emotional and intellectual growth, by establishing and maintaining a proper child-care environment and by promoting good relations between parents and the child-development center." (CDAC, 1978, p. 11)

A competency based credential is awarded on the basis of performance, not education or experience, and should predict successful performance in a given occupation.

The term competence has also been used to describe the development of both children and adults (e.g., White, 1959 and Bandura, 1977). According to this usage, the experience of being competent (meeting the expectations set either by one's self or by the environment) may in itself contribute to development. Competence seems to encourage people toward more attempts at effective action on the environment.

In this report, the term competence will refer to both meanings of the word. Competence stands for a way of assuring that children experience good quality of care. Competence also stands for an experience of successful performance that may contribute to the development of adults.

The Benefits to Children of Identifying Competence

To meet its original purpose as a benefit for children, the CDA credential should predict competent performance by persons working with groups of children in child care centers. The accuracy of the assessment and credentialing system is important to assure that care received by children is of high quality.

The purpose of the research was not to evaluate or challenge the definition of quality proposed by the Consortium. The extensive and lengthy involvement of diverse child care professionals in defining the competencies should guarantee that at least the concept of competence is associated with a quality experience. In fact, data from the ABT National Day Care Study do indicate that the CDA competencies (used as the basis for an observational checklist) are associated with some indicators of a good group care experience for children (Ruopp, et al., 1979). Rather, the purpose of this research was to determine whether those who earn the CDA credential are competent by the Consortium's definition. If the system operates in an inconsistent or inaccurate manner, individuals who lack the desired competence would earn the credential.

A valid indicator of competence would directly benefit children by selecting caregivers who perform according to a standard. It may indirectly benefit them by filling a gap in many states' licensing standards. If shown to be more feasible and less exclusive than traditional credentials, the CDA credential could be adopted as a standard (or used as a model) for states which now have no or very minimal staff qualification standards. In addition to creating a new professional category (Zigler, 1971), the CDA assessment/credentialing system might enable programs to easily identify and employ qualified staff.

The Benefits to Adults of Identifying Competence

Although the quality of the child's experience should be the first criterion in evaluating the CDA assessment/credential system, the importance of competence assessment for the adults who work in child care should not be underestimated. As Katz (1977) has suggested, quality of care for children and the experience of adult caregivers may be mutually supporting factors in the child care environment. The benefits of a competency-based approach for adults, while less obvious, should be both practical and long term. They result from the fairness of a competency-based test and from the intrinsic and extrinsic rewards of recognized competence.

Fairness was one of the first reasons given for developing competency-based employment procedures (White and Francis, 1976). A competency-based assessment avoids arbitrary requirements of education and experience which may have no relationship to job performance, and which may discriminate against disadvantaged persons. In addition, a competency-based assessment can make maximum use of human resources by identifying competent people already at work. An assessment which results in inaccurate judgements, however, will exclude some competent people from employment while admitting less competent ones. The issue of fairness may also apply where some practical features of the assessment keep some competent people from earning the credential.

A competency based approach should at least confer on the individual a sense of achievement, of efficacy in the work environment. Some motivation theorists argue that the experience of efficacy is

an essential component of adult development and contributes to continued attempts at successful coping (e.g., Bandura, 1977 and White, 1959). Unlike evaluations based on abstract written tests or educational requirements, a competency based assessment gives direct feedback about an individual's behaviors and abilities which meet the standard. In a team based evaluation like the CDA assessment, the individual would experience these positive, realistic evaluations from peers.

Zigler's original proposal describes a third potential benefit to adults--career development (Zigler, 1971). The creation of a nationally recognized credential, based on standards backed by the profession, was intended to give more recognition and value to the skills of caregivers. If valued, occupational mobility would result. The career development option would be particularly attractive to those for whom attainment of traditional credentials would be very difficult. Career development can indirectly benefit children by keeping competent persons at work in a center, thus sustaining both continuity and quality of care.

The Benefits of Competence for Children and Adults--Are They Possible?

The reader may notice a very heavy use of terms like "would", "could" and "should" in this section of the report. The CDA assessment/credentialing system seems like an excellent solution to many needs of child care; why the evasive language? Research should allow more confident statements about how ideas work in reality, but the expense and difficulty of much social research prevents many definite conclusions. In addition, the CDA is part of child care--where absolute judgements are rare.

A recent cross-national review of family policy (Kamerman and Kahn, 1978) documents the difficulty of evaluating child care. The many state and national laws, regulations, and programs represent a policy about children and families, but they are by no means coordinated, comprehensive or explicit. In considering the value of the CDA for improving the quality of child care, one should keep in mind alternatives, such as increased funds for child care, different child care delivery systems, supports to families which would reduce the demand for center based care, et cetera.

Another issue is the meaning and priority of professionalizing child care staff. One reviewer of staff qualifications noted that there are "unresolved questions about the levels of professionalism" (Meyer, 1977, p. 3), but still equated professional standards with education and training. The concept of professional may be interpreted in light of the values and interests of particular groups. The lengthy debate over the proposed Federal Interagency Day Care Regulations staffing guidelines seems related to a practical concern of some child care providers; professional staff may be desirable, but only if they do not add too much expense to already strained child care budgets. In the American Federation of Teacher's proposal on early childhood programs (AFT, 1976), professional staff would be drawn from the pool of excess public school teachers. Although proponents of the CDA offer it as a helpful alternative, others may see it as just another position in the debate on professionalism in child care.

Another issue which must be recognized in any evaluation of child care staff development is the potential for improving the status of staff (mostly women) employed in a sex-typed occupation. The almost universal association of women with child care leads to a chicken and egg problem. Are women underpaid because they work in child care or is child care low paying work because it is done mostly by women? The association is highly resistant to social change. As Sheila Kamerman observed, even in Sweden, with agressive policies to attract men workers, child care is still predominantly women's work with relatively low rates of pay (personal communication, November 28, 1979).

The potential value of the CDA for both children and their caregivers was the primary motivation for this research project. At the same time, confounding issues about child care policy, staff professionalism, and the status of women provided intellectual interest and a sense of personal investment for the research staff, participants and interviewers.

Ten year old celebrates his birthday with a piñata at day care.

DESIGN OF THE RESEARCH

The realities of child care as a social system and occupation, combined with the innovative features of the CDA assessment, create many challenges for researchers. Because these challenges placed limits on what could be accomplished in the research, they are helpful in understanding the design of the project.

1. Child care staff tend to work very hard for low rates of pay. Turnover in child care staff and programs is often high, but varies greatly from one situation to another.
2. Most child care staff are women.
3. Staffing standards vary greatly from state to state and program to program. Some states and

programs (e.g., Head Start) require the CDA or at least accept it as one option for staff qualifications. Most do not. Philosophies and goals also vary.

4. Persons who earn the CDA credential usually do so on personal initiative. Competence in child care may come from experience, formal education, or on the job training. Many competent child care staff do not have the CDA credential.

5. The career development value of the CDA credential may depend on its perceived value among child care professionals, programs and state licensing bodies as well as on labor market factors.

6. Although the CDA assessment collects much evidence about each Candidate, most is not reducible to numbers for statistical analysis. The judgements of the assessment team members tend to be shared, violating the independence between judgements required for many statistical tests.

What research design could meet these many challenges? Guided by the wisdom in the parable about the five blind people and the elephant, the study design included information from many different sources. The overlap of findings from many sources might suggest some conclusions about the CDA assessment and credentialing system. Each information source will be described along with the research approaches used. The different types of information fall into three categories: information about child care staff taken from interviews, ratings, and a written assessment; a content analysis of literature on child related occupations; and case studies of the relationship of state regulations to the CDA assessment/credential system.

Child Care Staff

Child care staff, all women, were the participants for the research. Men were not included as participants because of expected sex differences in career patterns, and because the small number of men employed in child care would not have allowed for a control on this variable in the analysis of data. Approximately half the participants had earned the CDA prior to being in the study; the remainder had had no formal contact with either CDA training or assessment.

All participants came from the ten midwestern states bounded by Regions V and VII of the U.S. Department of Health, Education and Welfare. The principal reason for restricting the research area was cost. However, the ten states include a variety of policies on child care regulations, CDA training approaches and child care programs. They represent a mix of urban and rural, and ethnic backgrounds.

The CDA participants were invited to participate in the study by a letter sent by the CDA Consortium to all women in the research area who earned the credential prior to December, 1977. The non-credentialed participants responded to advertisements in child care newsletters in the research area. After some potential participants in both groups dropped out because of the time required for the research, 180 remained. In the second year followup study, the number of participants dropped to approximately 165 because some had moved, changed jobs, or could not be located by their interviewers.

The use of advertisements tended to "self select" noncredentialed participants for the study. It was expected that those responding would be motivated and sufficiently committed to child care to take the time for the research project. The self selection of the noncredentialed group on the basis of motivation and commitment would tend to make them more like the CDA participants, whose successful completion of the assessment procedure also required motivation and initiative. Any observed differences between the groups could therefore be interpreted with more confidence.

Each participant was assigned an interviewer in her geographic area. This interviewer administered the written assessment and interviews, and contacted the supervisor to complete a rating scale. To establish the necessary rapport, all interviewers were also women and child care professionals. Prior to assignment and contact with the participants, interviewers participated in training sessions on the procedures and purposes of the project.

The participants were interviewed twice, with a one year interval between interviews. Because the literature indicated that both personal and occupational factors may be important in women's career development (Blau, et al., 1956), the interviews focused on subjects' personal experiences and attitudes about work and family as well as on their employment and educational backgrounds. The reactions of both interviewers and participants influenced the final form of the interview, but most questions were drawn from earlier studies on women's work, marriage, and family patterns. The interviews for the two years

provided valuable information about child care staff and their work: career paths for child care staffs, sources of training, the value of personal and occupational experience, and the relationship between work and family responsibilities.

The second year interview was an opportunity to review the career progress of participants and to explore in depth some ideas suggested by the first year analysis. One area of inquiry concerned attitudes toward work which might relate to attitudes about assessment. Another was based on the Day Care Forces Sort (DCFS, Rayder, et al., 1976). In the DCFS, participants rated different elements of the child care work environment in terms of positive/negative quality, strength of influence on the worker's performance, and degree of control the person had over the elements.

For most participants, interviewers and research staff, the most arduous aspect of the research was a written test of knowledge relating to the CDA competencies. Originally developed as a prototype for a competency based assessment, this test was written in sections which directly correspond to the six CDA competencies. Research suggesting high reliability and validity for this test has been published (Menne, et al., 1975). The test is composed of 83 multiple choice, true/false and short answer questions and is scored to provide a subscore for each competency area.

Although the written format of the test favored more highly educated participants, the questions are similar to those which occur orally in the process of a CDA assessment. Most answers are responses

to hypothetical child care situations; participants had to write what they would do and give a reason based on principles and concepts of child development/early childhood education. Although the questions did not come from the participant's own experience, the test scoring did allow for individual differences in work style and child care philosophy.

The third set of information about all participants came from ratings by their job supervisors. The first part of the rating form was copied from the CDA assessment team meeting form and consisted of a five point rating on each of the 13 functional areas. The second part of the rating form was 39 five-point items (three for each functional area) written to represent specific examples taken from CDA Consortium definitions for the functional areas.

A fourth set of participant data came from copies of the CDA assessment meeting vote forms from the CDA participants' assessments, provided by the CDA Consortium.

Each participant was seen by an interviewer at least twice in the two year study. In the first year, each participant completed the written test, was interviewed, and gave the name of her job supervisor to the interviewer. The interviewer contacted job supervisors to have them complete the supervisor rating form. Also in the first year, the Consortium sent the copies of the CDA assessment meeting vote forms for CDA participants. In the second year, the interviewers recontacted participants for the followup interview and Day Care Forces Sort. Participants who had moved out of the geographical area for the study were interviewed by telephone but did not complete the DCFS.

Literature on Child Care Related Occupations

Evidence of the career development potential of the CDA was sought in literature on job analyses, because the newness of the credential and the short time interval of the research did not offer much opportunity for observing actual career change. One indication of the career development value of the CDA credential would be evidence that the CDA competencies were transferable to occupations at a higher point on a career ladder.

Extensive references on occupations related to child care were searched manually and with computer assistance. After defining the range of possible occupations with standard references such as the Dictionary of Occupational Titles (USDOL, 1977) the search reviewed selected abstracts from the Educational Resource Information Center (ERIC) and the National Technical Information Service (NTIS). A review of approximately 250 citations resulted in an initial pool of ten references which might represent steps in a career ladder for child care staff.

The search was restricted to documents which offered concrete descriptions of tasks and/or worker qualifications. By content analysis, items from the job analyses of related occupations were matched with the CDA competencies to define realistic career options in terms of transferable skills and additional training required for movement into the new occupation.

The search for career opportunities was limited to child related occupations for several reasons. The development and care of young

children represents a well defined knowledge and skill area; movement away from child related jobs would require considerable re-education in another content area. Although the CDA competencies might translate into more abstract competencies which would be transferable to other jobs, the definition of such abstract or generic competencies was beyond the scope of this study. In addition, questionnaire data from this study suggested that the enjoyment of young children, or the positive sense of contributing to their development, were fringe benefits highly valued by the research participants.

At the same time, the restriction to child related occupations seriously limits the analysis of career potential. Remick (1978) has pointed out that sex typing occurs even when job analyses are based on specific skills. Many worker skills and task attributes are themselves sex typed, and skills in female-dominated occupations are usually undervalued relative to typical "male" skills. The skills associated with child care are almost universally associated with women, and any child care occupation is likely to be a poor career opportunity, at least in terms of financial rewards. The ambiguity of family policy in the United States also may reduce job security and status of child care occupations.

In summary, the literature on child related occupations was searched for evidence of career development potential for the CDA credential. The focus was restricted to child related occupations for several practical reasons; this focus may limit the extent of career potential defined by the search.

State Licensing and the CDA Credential

Inclusion of the CDA credential as an alternative in licensing and certification in child care regulations would increase the credential's career development value for those who have earned it. In addition, the pool of qualified persons to work in child care might be increased to include staff who lack traditional education and degrees but who have a CDA credential.

To date, approximately 14 states have included the CDA in either child care center licensing or early childhood staff certification (ACYF, 1977). State agencies have varied greatly in their willingness to recognize the CDA and in the way they have recognized it.

It was beyond the scope of this study to review all the states' licensing and the potential relationship to CDA. Instead, in depth case studies of two states were used to suggest key elements in the decision to recognize the credential. One state was Minnesota, where the CDA meets a staff qualification standard for child care center licensing. The second was California. Although the CDA has been considered for child care in that state, it has not been adopted.

Summary

This research has been stimulated by frequently lively interactions between research staff, participants and interviewers. Similarly, the interaction of the three major areas of the research design should stimulate some new insights, and perhaps conclusions,

about the CDA credential. In the report sections that follow, findings from the three areas will be integrated as they apply to particular research questions and issues. The reader should keep in mind the diverse nature of the content and of the methods in the three areas.

Making cookies with Mom.

RESULTS OF THE STUDY

This section gives a summary and interpretation of the research results as they relate to the two central questions of this study:

1. Does the CDA assessment measure what it was designed to measure? That is, in what ways are those who have earned the CDA credential competent child care staff? This question pertains to the validity of the CDA assessment/credential system.
2. What career benefits have resulted for those who have the CDA credential? What benefits might they expect in the future? These questions are covered in the sections on career development.

Readers who seek a more thorough description of statistical methods and the theoretical basis for some interpretations should

refer to the Final Report. The report will be submitted to the National Institute of Education in May, 1980, and will be available through the Educational Resource Information Center (ERIC) after that date.

Validity

The term "validity" has strictly defined usages within measurement research; it refers to several recognized methods of investigating the question, "Does the test measure what it claims to measure?" In this section, the question is rephrased as, "Does the CDA assessment/credential system identify competent child care staff?" Some of the evidence presented here conforms to the traditional uses of "validity", but other results rely on a less conventional interpretation of the term.

The question of validity of the CDA focuses on four areas of inquiry: evidence of the competence of CDA participants, consistency of judgements in the CDA assessment procedure, and access to and outcomes of the CDA assessment as they relate to validity.

Evidence of Competence

The research design included two measures intended to compare CDAs and the noncredentialed group on aspects of competence: a written assessment and ratings by job supervisors.

The written assessment was developed at Iowa State University to assess CDA competence by short answer and essay questions (Menne, et al., 1975). It is described in more detail in the section on

research design. Because the CDA group included more highly educated persons and fewer from ethnic minorities, there was the risk that test scores would reflect differences in educational opportunity rather than in competence. Therefore, the analysis of test scores used a multiple regression approach to control for the group differences in education and ethnicity. These variables were significant predictors on all six competency scores in the multiple regression model.

CDA participants did perform significantly better on two of the competency scores, even when the differences on education and ethnicity were taken into account (Table 2). The significant differences occurred in Competency 1 "Set up and maintain a safe and healthy learning environment", and Competency 5 "Promote optimal coordination of home and center child rearing practices". There was no evidence of a ceiling effect in the test scores, or of measurement artifacts such as restricted range in scores. Therefore, the between group differences in scores seem to indicate higher levels of competence for the credentialed group. In addition to possible differences in understanding desired child care practice, the CDAs' performance on the written test suggests more skill in verbalizing their reasons for these practices. The significant difference for the first subtest is of particular interest, because this competency would be important in all programs regardless of administrative structure, philosophy or goals. The significant difference on the Competency 5 subtest may be due to the higher representation of credentialed staff in Head Start, where parent involvement is a major program emphasis.

Table 2

Results of Multiple Regression Analysis for Written Assessment Scores

Subtest	Source	F	p	Means	Total Score Possible
1. Establish a safe and healthy learning environment	CDA	7.89	.01		
	Education	22.69	<.01		
	Ethnicity	45.37	<.01		
				Not CDA = 44.9	57
				CDA = 46.6	
2. Advance physical and intellectual competence	CDA	1.56	.21		
	Education	28.18	<.01		
	Ethnicity	37.82	<.01		
				Not CDA = 53.6	62
				CDA = 53.5	
3. Build self concept and individual strength	CDA	0.00	.98		
	Education	20.10	<.01		
	Ethnicity	42.20	<.01		
				Not CDA = 39.5	48
				CDA = 38.6	
4. Promote positive functioning of children and adults in a group	CDA	1.62	.19		
	Education	10.56	<.01		
	Ethnicity	26.03	<.01		
				Not CDA = 9.8	13
				CDA = 9.9	
5. Optimal coordination of home and center	CDA	4.37	.04		
	Education	31.28	<.01		
	Ethnicity	35.61	<.01		
				Not CDA = 20.2	23
				CDA = 20.51	
6. Supplementary responsibilities	CDA	1.63	.20		
	Education	13.42	<.01		
	Ethnicity	40.79	<.01		
				Not CDA = 10.31	15
				CDA = 10.5	

The second measure for the two groups was the supervisor rating. Completed by a job supervisor selected by each participant, this rating included a copy of the CDA assessment meeting vote form plus 39 specific items relating to the functional areas.

Unfortunately, the supervisor ratings did not provide useful information for a comparison of the two participant groups. Although a rating was returned for almost every participant, all the ratings were very similar--and extremely high. The very narrow range of scores, all at the upper end of the scale, may reflect the supervisors' perceptions of highly competent staff. However, a more likely interpretation is that the rating produced a "halo effect"; the structure and content of the rating scale did not encourage careful discriminations between items or between individuals, so the ratings were all very similar.

The written assessment did provide some evidence of differences in competence, although the written test is not directly related to competent job performance. The supervisor ratings scale could not be used for comparing the CDA and noncredentialed group because of a halo effect in the rating.

These findings must be viewed with caution. The possible inclusion of competent, though noncredentialed, persons in the non-credentialed group may account for the absence of more group differences on evidence of competence. In addition, the comparisons are based on the assumption that the written assessment measures

competence as defined by the CDA competencies. The possibility that the written test measures other competencies, or interferes with some participants' performance, must be considered.

Consistency of Judgements about CDA Candidates

Validity depends on consistency in measurement as well as accuracy. Consistency should be demonstrated when a measure is used for judgements about different individuals, when used by different raters, or at different times. An assessment which produces inconsistent judgements cannot be depended on; how can one know which of the judgements are accurate and which are not?

The job supervisor rating form included an exact duplicate of the CDA assessment team meeting vote form, so that comparisons between the two ratings were possible. On the meeting form, each assessment team member rates the Candidate on each of the 13 functional areas. The ratings are on a five point scale ranging from "needs more training" to "excellent".

The ratings from CDA participants' assessment meeting, plus their job supervisors' ratings, provided the data for an analysis of consistency. Statistical procedures were used to estimate the amount of agreement between the four assessment team members and a fifth rating by the job supervisor. (Because the meeting vote forms were filled out both before and after each rating, there were actually nine ratings for each CDA participant, two each from the four members plus the job supervisor rating.)

The average intercorrelations of these nine ratings from five individuals are presented in Table 3. Although all are statistically significant correlations, none attain levels usually expected for

Table 3

Average Interrater Correlations for Four LAT Members and Job Supervisor

Functional Area	r	Average Offdiagonal r
1	.70	.21
2	.72	.22
3	.72	.22
4	.68	.19
5	.82	.33
6	.74	.24
7	.74	.24
8	.74	.24
9	.73	.23
10	.76	.26
11	.75	.25
12	.72	.22
13	.73	.23
Overall competency	.73	.25

"good" consistency. Four of the raters were chosen to represent very different points of view, but four ratings occurred after the team had shared information and discussed their differing viewpoints. Because of the structure of the CDA assessment, each of the team members' judgements would be based on a different set of evidence.

Given the very general definitions of the functional areas, the results on consistency are encouraging. In using the functional

areas as rating guidelines, the raters interpreted general criteria in terms of the specific and widely varying demands of different child care settings. The raters themselves varied in the amount of education which might help them in interpreting the functional areas. They also varied in amount of experience with the CDA assessment process. Although the statistics on consistency indicate room for improvement in the assessment procedure, they are of a magnitude to suggest that the assessment already is performing with some consistency.

Access to and Outcomes of the Assessment/Credential System

To encourage more attention to the practical and humanistic implications of testing, I have proposed the concept of pragmatic validity (Pettygrove, 1979). Recognized validity methods estimate the accuracy of a test when used in rigorously controlled and clearly specified conditions. The performance of a test in the real world, especially as it influences certification, job placement, performance and promotion, is harder to analyze. Before describing three sets of information about the pragmatic validity of the CDA assessment/credential system, it may be helpful to review the concept of pragmatic validity.

A test can be viewed as a system in which information about an individual's performance is fed into a measurement device; as a result, judgements are made about the individual. These judgements (the output of the system) lead to some action regarding the individual: prescription of learning activities, placement in a job, credential award, et cetera. It is helpful to think of the test

as a system because this allows the consideration of non-test elements which can affect the test's results. For example, if a test is very expensive, some persons who might benefit from passing it will not because they cannot afford to take it. Similarly, an employer who misinterprets the purpose of a test may make inappropriate job placements on the basis of test scores. These are examples of an otherwise valid test having poor pragmatic validity.

The Day Care Forces Sort--Perceptions of Self and the Work Environment

One outcome of a test may be changed perceptions about one's performance. The Day Care Forces Sort (DCFS, Rayder, 1976) was used to investigate the CDA as it relates to attitudes toward self and the work environment.

If a test identifies competence, then it may contribute to more competent behavior, or at least an attitude that one is competent. This humanistic implication of competence assessment is suggested by motivation theory. According to theorists such as White (1959) and Bandura (1977), the experience of competence is a motive for the individual to interact with the environment. The experience of success (meeting goals set by oneself for the environment) can be seen as at least as important as drives or needs in influencing the way individuals act in their environments.

If a person is identified as competent by attainment of the CDA credential, one might predict that this set of success experiences, reinforced by the assessment itself, would be reflected in perceptions of self and the work environment. A competent individual would be more likely to perceive herself as having control over what she perceived as very influential elements of the environment. An active response to such strong influences, whether positive or negative, would be a prerequisite to coping and problem solving.

DCFS data were analyzed to test this prediction. The data included three sets of ratings by each participant of 26 different elements of the child care work environment. One rating indicated whether each element was a positive or negative influence in the environment; another indicated items' strength of influence, and the third indicated the degree of influence the individual felt she had over each element. The positive/negative rating results are reported in the career development section of the results. The strength and control ratings are the basis for the analysis reported here.

The results of the analysis of DCFS strength and control items are reported in Table 4. A repeated measure analysis of variance was used to allow simultaneous testing of the effects of group (CDA versus noncredentialed) and scale (Strength versus Control). To support the prediction that CDAs would report more control over those items with higher strength, the interaction of group by scale would have to be significant. Neither the main effect of group nor the group by scale interaction were significant. The perception of

Table 4

Analysis of Variance for Day Care Forces Sort Strength and Control Ratings

Source*	F	p
Group	.42	.52
Scale	277.25	<.001
Scale x Group	.38	.54
Item	105.05	<.001
Item x Group	1.3	.14
Scale x Item	79.27	<.001
Scale x Item x Group	.95	.54

*Group refers to placement in either CDA or noncredentialed group. Item refers to the 26 child care environment items rated on the DCFS. Scale refers to the DCFS Strength and Control scales.

control over strongly influential items was not related to whether or not the person was a CDA.

There were significant main effects for scale and items, and a significant scale by item interaction. It appears that participants did perceive patterns of influence in the elements of their work environment, and that their perception of control was related to the strength of each element's influence.

The results of the DCFS analysis do not suggest that self perceptions of control are related to credentialing, at least for the persons in this study. Self perceptions of control were related to the perceived influence of various elements, but not to credential status. One interpretation of these results is that persons with high self perceptions of control were represented in both groups of

participants. That is, a competent orientation toward the environment may include the feeling that one can control influential parts of it, but this is not related to having the CDA credential.

In other data, CDAs did give indirect evidence of the credential's effect on their self perceptions. For example, they expressed significantly more agreement with the interview item, "I consider myself a career woman." (Table 7) Also in the interview, one of the most frequently mentioned benefits of the CDA credential was self assessment, suggesting awareness of own competence. These results are explained more fully in the sections on interview data.

It may be that the credential does contribute to heightened self awareness of competence, but that this does not result in changes in the environment. Some CDAs may find themselves in work environments which are subject to some control. Other CDAs, in their responses to the DCFS rating task, may be making a realistic appraisal about their lack of control over their work environments.

The interpretation of the DCFS data was based on concepts (from motivation theorists) about the meaning of competence and its relationship to the work environment. These concepts are relatively untested by research. In addition, the DCFS is a new instrument. Additional work is needed to explore the relationship between competence assessment and self perceptions of competence.

Interview Data

The responses of research participants to the written test, and CDA candidates' comments to research staff about the CDA assessment,

suggested other approaches for investigating pragmatic validity. Both depend on the analysis of interview data. One approach was to compare CDAs and noncredentialed participants on attitudes which might help or interfere with successful attempts at the CDA assessment; differences between groups on these attitudes might suggest aspects of the test which keep some persons from attempting it. The second approach was to look at resources and other factors available to the CDA participants which may have helped them attempt the assessment.

If some characteristic of a tests' procedure seem too novel, difficult or risky, otherwise qualified applicants may be prevented from passing it or even attempting it. An example of this problem is a driver's test written in English which must be taken by persons whose first language is not English. The ability to read English has very little, if anything, to do with driving a car, but this test would select only drivers who also can read English.

The CDA assessment seems designed to require only minimal literacy levels and to accommodate cultural diversity, but its novel procedures may create other hurdles to competent persons. For example, several aspects of the procedure have the potential to appear difficult or threatening to applicants.

1. CDA candidates must take a leadership role in selecting assessment team members, pacing the assessment process, and determining when the members and their materials are ready for the assessment.

2. Candidates must be willing to be observed and evaluated in the work setting by three other individuals; one observer is a complete stranger who may be perceived as an "outside expert".
3. Candidates must keep records on their work, and evaluate, organize and write them in the portfolio for the assessment.
4. Candidates must work in a cooperative relationship with members of the assessment team while being evaluated by them.

Although these tasks require characteristics of value in many work settings, their relationship to competent child care was not defined in the CDA competencies. It may be that ability to complete the assessment, with its novel and perhaps threatening procedures, represents an implied competency for potential CDAs.

Some items in the interview were designed to explore the participants' attitudes relating to the potentially novel and threatening aspects of the assessment. Because the noncredentialed group had no direct experience with the CDA, the items could not be based on actual assessment features. Questions about testing also tend to create a bias; people tend to answer in the manner they think others expect. To avoid both problems, aspects of the assessment procedure were translated into comparable elements of child care work. For example, the recording, evaluating and organizing of observations for the portfolio were translated into the item:

(1 = Always true for me)		(7 = Always true for me)
Some people keep written records (like a journal) to study their own growth as a caregiver.	and	Other people do not find such records helpful in understanding their growth.

The second year interview included 19 items relating to leadership role, willingness to be observed, ability to record and evaluate own performance, and membership on the assessment team. Each item was rated on a seven point scale.

The data from the 19 items were analyzed by a multivariate discriminant analysis. This statistical method asked the question, "Which of the 19 items, combined as one variable, most effectively describe the differences between the two groups?" The method avoided making 19 separate comparisons which might result in chance findings of significance or overlapping conclusions because of similarities between items.

The results of the comparison on the 19 attitude items are shown in Table 5. Significant differences between CDAs and other participants did appear on four items; two of these four accounted for most of the difference between groups. The mean values for item 10 suggest that CDAs were more likely to use records similar to the portfolio, so that the portfolio requirement may be differentiating between those who attempt the CDA assessment and those who do not. The mean values for item 15 suggest that CDAs are more comfortable with visitors in their center, suggesting that tolerance of observers is another differentiating aspect of the assessment process. An argument about cause and effect cannot be made from this analysis, however. It is quite possible that attitude differences result from the assessment experience (an effect), rather than influencing person's decision to go through it (a cause). The absence of

Table 5.

Discriminant Analysis of Test-Related Work Attitudes

Step[1]	Item #	Individual F	
#0 (df 1,144)	2	3.746	
	10	13.123	
	15	7.408	
	18	5.397	
#1 (df 1,143)	enters item 10.		Overall F^2 for this step = 13.123
	10	13.123	($p < .01$)
	2	1.926	
	15	5.274	
	18	3.361	
#2 (df 1,142)	enters items 10 and 15.		Overall F^2 for this step = 9.393
	10	10.870	($p < .01$)
	15	5.274	
	2	.896	
	18	2.558	

[1]The stepwise discriminant analysis enters items sequentially beginning with the item with the largest individual F value.

[2]This is the approximate F value calculated from the U Statistic or Wilkes λ for the multivariate model.

Item		Mean CDA	Not CDA
2. Some people share their own work and tasks with volunteers. (=1)	Other people give volunteers tasks which would not be done by paid staff. (=7)	2.26	2.73
10. Some people keep written records (like a journal) to study their own growth as a caregiver. (=1)	Other people do not find such records helpful in understanding their growth. (=7)	3.23	4.45
15. Some people are uncomfortable having visitors in the center. (=1)	Other people enjoy visitors. (=7)	6.07	5.50
18. Some people like to have a supervisor who works closely with them. (=1)	Other people prefer to work without direct input from their supervisor. (=7)	3.61	4.39

significant differences on 15 of the 19 items indicates that CDAs and the noncredentialed group may have as many similar perceptions of the assessment process as differences.

Some other questionnaire data support the possibility that perceived novelty, or at least lack of helpful information, may influence potential applicants for the CDA assessment. Significantly more of the CDA participants are employees of Head Start, a program which has emphasized the CDA in staff development programs, with special programs, materials and staff committed to informing staff and helping them prepare for the CDA assessment. Special assistance has focused on understanding the assessment procedure, selecting assessment team members, and preparing the portfolio. Head Start staff are more frequently enrolled in field-based CDA training than staff from other programs (Klein, 1978), so they would also gain more experience with being observed and evaluated in the work setting.

It is important to consider that the novel aspects of the CDA assessment, which may be its chief value, may also adversely affect persons it is designed to serve. These novel features affect the pragmatic validity of the assessment to the extent that they are perceived as hurdles by persons who would otherwise apply for and succeed in the assessment/credential system.

The analysis of test attitude items pointed to differences in the two groups that might affect access to the credential. The second approach to the question of access was to ask participants about things which may have helped them to complete the CDA assessment.

Responses of the CDAs and noncredentialed group indicated that available resources and perceived requirements may relate to attempts at the CDA assessment (Table 6).

The training resources offered to CDAs included a trainer to help with the CDA assessment, college courses and workshops. Although noncredentialed participants also reported help from trainers who visited and observed them, only one had a trainer specifically to help with the CDA assessment process.

Responses from CDAs indicated the value of a support system in preparing for the assessment. Although 31 percent had been the only one in their center working on the assessment, a large percentage of CDAs (75 percent) felt it was helpful to have peers sharing the procedure.

State or center requirements may be a major impetus for earning the credential. When asked why they did not have the CDA, many in the noncredentialed group reported that they were not interested in it (65 percent). Others gave reasons such as the absence of a requirement for the credential (nine percent) or not having time to prepare for the assessment (nine percent). These responses suggest that environmental factors may override any intrinsic value of the credential.

A lack of interest in the credential may reflect a realization that it will not have any career value for staff in programs not requiring the CDA. Significantly more of the CDA group reported that the credential was either a state or center requirement for some staff.

Table 6

Interview Responses on Access to CDA Credentialing

CDAs only

		%
1. First heard about the CDA?	workshop	33
	other training	4
	coworker	16
	consortium brochure	7
	college class	9
	other	31
		100
2. Staff in your center working on the CDA at the same time?	alone	31
	one other	14
	2-5	28
	more than 5	27
		100
3. Helpful to know others working on the CDA?	yes	75
	no	25
		100

Noncredentialed only

4. Main reason for not having CDA?	haven't taken time	13
	not interested	65
	not required	9
	other	13
		100

X^2 tests comparing both groups

5. CDA required by the center.

	Director	Teacher	Other	Not required	p
CDA	4	36	6	40	
not CDA	1	4	9	60	<.001

6. CDA required by the state.

	Director	Teacher	Other	Not required	p
CDA	3	7	11	64	
not CDA	1	1	2	69	<.03

7. training helps

	Trainer	Trainer visits	Books & Materials	College Courses	Tuition Paid
CDA	11	9	8	18	2
not CDA	1	10	9	9	0

	Workshops	Other	p
CDA	22	6	
not CDA	21	16	<.02

This study provided no evidence, however, that the CDA resulted in improved chances for pay increases or promotions. The findings are discouraging for staff who would seek the CDA. In addition, they suggest that employers do not understand or recognize the credential's value as an alternative to existing staff qualification guidelines. The section on career development potential gives a more complete discussion of the findings on pay and promotion.

Summary

The pragmatic validity of the CDA assessment/credential system could be viewed in many ways. The research reported here focused on two: a developmental outcome (self perceptions of competence in the work environment) and features of access to the assessment.

The results from the Day Care Forces Sort do not support the prediction that CDAs perceive more control over influential parts of the environment than noncredentialed staff. The problem of sampling intruded here; perhaps competence motivation is an aspect of competence, but was equally distributed in both groups in this study. Alternatively, CDAs may gain self perceptions of competence from the assessment, but for various reasons the perceptions do not affect their perceptions of the work environment. Clearly, there is a need for additional research in this area.

Access is influenced by characteristics of the assessment which make it open to all who want to attempt it. Although the CDA was designed to be culturally relevant and nondiscriminatory, it may favor persons who share characteristics besides their competence as

defined by the CDA standards. The data on test-related work attitudes point to some common characteristics. Future research should explore the degree to which such characteristics are hurdles to some who attempt the assessment. Perhaps they bear some meaningful relationship to competence.

Access may also include environmental factors which push or pull individuals into an assessment. Participant groups differed on the availability of training resources, supports for assessment, and pertinent credential requirements. These elements may strongly influence the meaning and value of the credential to child care staff and their employers, especially in the absence of concrete benefits like pay and promotion.

Career Development Potential

An evaluation of the career development potential of the CDA credential was one of the original reasons for this study. Because the CDA was proposed in part as a career development strategy, its benefit for the careers of child care staff should be demonstrated.

As the research progressed, it became increasingly apparent that the CDA credential's value had to be interpreted in the light of caregivers' experiences. The following anecdote about Fran (not her real name) tells the story. The anecdote was contributed by Elaine Williams, one of the interviewers for this project:

> *Fran does not have a high school diploma - yet she has taken college courses. The woman who encouraged her to get her CDA was the Center director. Fran felt good*

about getting her CDA. Last year a program coordinator position opened at her center, a position of supervision of other staff and curriculum support. Fran was told by the director that she could not apply - because she didn't have a college degree. She felt her CDA should count for something (and the other teachers in the center already looked to her in these areas because the director had become too busy to help with these day to day matters). The "frosting on the cake" was that a young person with no teaching experience and a degree not even in education, got the job. (Since then the center, according to Fran, is declining. The director has left, the board is split over the new program coordinator and the staff is petitioning for her firing.)

Other places to which she applied - Head Start, public school, and private centers all were unimpressed by her CDA. Fran commented, "I thought the CDA was supposed to count for something." She doesn't regret having gotten it - only that it doesn't seem to matter that she did.

Therefore she opened her own home for child care - but does it day and night and weekends and thus is working truly 141½ hours per week! (6 AM until 1 or 3 AM) Fortunately her older kids stay up late or one who works nights covers a part of the day sometimes. The need is there for night and weekend care - a single parent having to work 2 jobs, but it makes Fran's work long. Her caring and savvy are tremendous too.

The story about Fran contains many elements which appear in the interpretation of empirical data from this study. Child care programs are ambivalent about hiring persons with degrees and other traditional credentials (preferred by center policies and government regulations) over those with experience and demonstrated ability. Child care

staff see the CDA, as other aspects of their work, as offering intrinsic satisfaction--but question whether status or financial rewards will result. Staff may exhibit extreme commitment and sensitivity towards the families of children in their care, but see few career options for themselves. Often family variables (including support and aide from family members) may figure into the career pattern.

Results on career development potential will be reviewed in three sections: participants' personal and career history, a career ladder analysis, and a case study on two states' child care regulations.

Personal and Career History of the Participants

One of the most important activities in both years of the research was an interview with each participant. The interview questionnaire was designed to measure two kinds of variables. Opportunity variables describe aspects of the person's situation or environment which may influence her career; personality variables describe the person's development, preferences and attitudes (Blau, et al., 1956). Although most statistical analyses emphasize differences between groups, similarities are often as important as differences.

Some basic differences between the CDA and noncredentialed groups should be kept in mind in interpreting the results (Table 7). The CDA group tended to be older (significantly more in the over 30 group) and to have more children. It included more married women,

Table 7

Interview Data Related to Career Development Analysis

X^2 analysis comparing the two groups

Variable		CDA	not CDA	p
Age	18	0	2	<.001
	18-24	4	25	
	24-31	13	25	
	31-45	44	19	
	over 45	29	9	
Family status	married	70	50	.029
	other	20	30	
Children	none	2	4	<.001
	1	14	35	
	2-4	53	36	
	5 or more	21	5	
Program type	Day Care	14	44	<.001
	Head Start	53	7	
	Other	20	29	
Factors interfering with employment	none	47	42	<.01
	job market/ education	6	18	
	family	26	10	
	other	10	9	

Multiple regression analysis of attitude items

	p values for regression terms		
	CDA	Education	Age
I consider myself a career woman.	.0154	.4241	.0008
College courses have been relevant to my work.	.0252	.7101	.4797
My children benefit from my working.	.0313	.6630	.0132
My child rearing ideas have changed as a result of my working.	.0015	.0745	.0416
Husband's child care hours at home.	.037	.581	--

and more who worked in Head Start, but fewer from ethnic minorities. Significantly fewer CDA participants were employed in day care.

Wherever possible (as in the analysis of the assessment scores for validity), statistical methods were used to control for group differences which might affect the interpretation of results. It is not possible to determine whether the differences were due to errors in sampling or are an accurate representation of differences between CDAs and other child care staff beyond those persons included in the sample.

There were few significant differences between groups on attitudes toward family, in spite of other group differences (Table 8). CDAs were more likely to agree with the statements "My children benefit from my working," and "My child rearing attitudes have changed as a result of my work." The husbands of CDAs tended to contribute more hours to child care in the home, but husbands' household contributions were low for both groups.

The finding on family, coupled with the group differences on age, marital status and number of children, may describe two different patterns of career and family. The older CDAs, many of whom entered child care as volunteers in their own children's Head Start program, seemed to view their work as integrated with family responsibilities.

The apparent integration of family and work may also be related to aspects of CDA training and credentialing which would encourage a more integrated view of education and experience. Significantly more of the CDAs' child care courses came after their employment in child

Table 8

Nondiscriminating Attitude Items

Item	Mean* for all participants
I consider child care a profession.	1.34
If I had my choice, I would not be working in this field.	6.20
My child care in-service training has been meaningful to my job as a child care worker.	2.19
Most of my knowledge and skill is from my education and training.	2.72
My close friends strongly approve of my having a career.	1.73
In general, I feel my children have received good care.	1.45
I feel guilty about working when it comes to my children.	5.44
I feel the quality of family relationships is better because I am working.	2.34
I would rather be home with my own preschool aged children.	3.95
I feel I give more to the children at the center than I do to my own children.	5.65
My children accept my working.	1.68
My experiences in raising my children have been very rewarding.	1.27

*1 = strongly agree, 7 = strongly disagree.

care, and CDAs were significantly more in agreement with the statement "college courses have been relevant to my work" (Table 8). These differences conform with the intent of CDA training to provide field based training with college credit and integration between academic and field experiences. Although CDA training is not a prerequisite for attainment of the CDA credential, it seems to be reflected in the responses of the CDA participants.

CDAs and noncredentialed participants differed in their attitudes towards work and work related benefits, but the two groups had no significant differences in several important areas. Some attitude items suggested that all participants valued intrinsic rewards over rewards such as pay and status. Although CDAs were more likely to agree that they saw themselves as a career woman, both groups saw child care as a profession (Table 7). The definition of profession seemed to come from child care's education and training requirements (mentioned by 43 percent of the participants), emphasis on working with young people (34 percent), service orientation (10 percent), and responsibility (13 percent).

The definition of professional seems in accord with what the participants saw as benefits of their work. Both intrinsic (for example, "I enjoy what I do") and extrinsic ("the money is necessary for my family") benefits were mentioned with almost equal frequency. CDAs and noncredentialed staff did not differ significantly on questions about job benefits or job satisfaction.

Readers of this report will not need to be reminded that child care is very stressful, demanding, but low paying work. Many of the participants are working in addition to carrying responsibility for a family. Their views on professionalism are particularly striking in view of the reality of their jobs.

The participants' preference for both intrinsic and extrinsic benefits may seem contradictory to some readers. Other studies on child care staff attitudes towards work (e.g., Robinson, 1979 and Wright, 1977) have found that women in child care tend to emphasize more extrinsic reasons for their work: pay, security, need for the income. However, these studies used men in child care work as their basis of comparison. Given their broader job options, men may choose child care work out of personal commitment or enjoyment rather than pay and security. Other jobs are available to men which offer better extrinsic benefits. Women's more practical reasons for working in child care probably reflect their awareness of the labor market realities for women rather than a devaluation of the intrinsic benefits of child care work.

A set of items which failed to discriminate between CDAs and the noncredentialed participants (Table 8) offers a picture of their views on family and work. These attitude items suggest fairly positive attitudes towards both. Only with regard to the worker's own preschool children does there seem to be ambivalence about the combination of two careers.

A second set of interview data was used to investigate possible differences in the career development of the two groups. The actual career history of participants is described in the section on career ladder analysis. In addition, some data described participants' changing career aspirations.

Each participant was asked to remember major change points in her own development, along with the career aspiration she held at that point. These career goals were coded by occupation category for each age milestone (Table 9). In addition, each participant was asked about her "career dream":

> "If you were graduating from high school now and could pursue the necessary training and education, toward what career would you work?"

The results on career goals at each milestone offer some interesting insights on the relationship of personal development to career preparation. At the teenage milestone, the highly significant difference seems to be due to CDAs' preference for public school teaching. Preferences of the noncredentialed group spread across different occupations. The early adulthood milestone indicates shifts by both groups, with more preference by CDAs for homemaking and by noncredentialed participants for child care work. The late twenties milestone table indicates no difference between groups, with a slightly larger number in both groups preferring to seek more education. As suggested by many sources (e.g., Klein, 1975), women's career paths tend to show shifts and breaks which accommodate changing family and marital status. The similarity of the two groups in the

Table 9

Career Goals at Each Milestone
(percentages in parentheses)

	Total responding	Public school	Child care center	Recreation, Health	More education	Business, Professions	Nursing	Technician, Sales, Clerical	Secretary	Skilled, semiskilled trades	Homemaker	Other	p value X^2 analysis
I. Teenager													
CDA	74 (100)	25 (34)	2 (3)	2 (3)	1 (1)	13 (17)	5 (7)	2 (3)	9 (12)	3 (4)	12 (16)	0 (0)	.05
not CDA	70 (100)	14 (20)	5 (7)	7 (10)	7 (10)	10 (14)	5 (7)	5 (7)	3 (4)	6 (8)	7 (10)	1 (1)	
II. Early adulthood													
CDA	57 (100)	8 (14)	3 (5)	0 (0)	4 (7)	5 (9)	1 (2)	2 (3)	4 (7)	5 (9)	25 (44)	0 (0)	.0001
not CDA	60 (100)	11 (18)	21 (35)	2 (3)	6 (10)	9 (15)	2 (3)	0 (0)	0 (0)	3 (5)	6 (10)	0 (0)	
III. Late 20's													
CDA	51 (100)	9 (18)	15 (29)	1 (2)	9 (18)	3 (6)	0 (0)	1 (2)	1 (2)	0 (0)	8 (16)	4 (8)	.67
not CDA	36 (100)	5 (14)	11 (30)	1 (3)	6 (17)	4 (11)	0 (0)	0 (0)	1 (3)	2 (5)	2 (5)	4 (11)	
IV. 30's													
CDA	47 (100)	7 (15)	26 (55)	8 (17)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (6)	3 (6)	.01
not CDA	18 (100)	2 (11)	11 (61)	0 (0)	2 (11)	2 (11)	0 (0)	1 (5)	0 (0)	0 (0)	0 (0)	0 (0)	
V. 40's													
CDA	24 (100)	1 (4)	20 (83)	1 (4)	1 (4)	0 (0)	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	.82
not CDA	11 (100)	1 (9)	9 (82)	1 (9)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	..

late twenties may be the result of common family factors overriding career differences. The significant difference in groups at the fourth milestone may be further evidence of differences in career paths. However, the tables for milestones IV and V are so sparse that any interpretation may be inappropriate.

The meaning of the differences and shifts at milestones is difficult to interpret in terms of the participants' current employment in child care. Perhaps some CDAs see their credential as a way to accommodate the early goal of public school teaching to a reality which included increasing family responsibility and changing job and educational opportunities. Similarly, the noncredentialed groups' gradual shift from diverse career goals to an emphasis on child care may indicate an adjustment in goals as the women faced narrowing career options.

The small sample size and diversity in responses required that age milestones be used as the basis for comparison. However, age may not be a valid basis. Because more of the CDAs are over 30 years old, many CDAs would have experienced their milestones at an earlier time than noncredentialed participants. Changes in values, expectations and opportunities for women could be an intervening variable. Many CDAs finished high school when public school teaching was one of the best professional opportunities available to women, and when it was a prevailing assumption that almost all women would marry and have children.

Responses to the career dream question indicated that many participants are working in child care because they prefer it. However, many participants aspire to other occupations. Of the occupations mentioned, the highest percentages were in the categories of child care (46 percent), business and the professions (19 percent), and public school positions (16 percent). There were no significant differences between CDAs and noncredentialed participants in the patterns of their responses to the career dream question.

Career aspirations may not be contributing or causal factors in women's attainment of the CDA credential. However, they do offer an interesting context for viewing participants' emphasis on intrinsic as well as extrinsic benefits for child care work. Career choice for women continues to be strongly influenced by the realities of limited opportunities and conflict with family responsibilities. While not offering high pay or status, child care is work which has much intrinsic value and satisfaction. It may also fit better in women's dual career patterns than other occupations open to them.

The results summarized here have suggested some differences and many similarities in the career and family patterns of the two groups. What about the impact of the CDA in improving career status or rewards for credentialed staff? Very few differences between the groups indicated positive career outcomes for the CDAs in this study. Those few benefits seemed to be more symbolic than concrete.

The CDA participants were asked what benefits they had perceived from having the credential. (This question was a part of the second interview, at least one year after the CDA credential was awarded.)

Of benefits mentioned, the most common was self assessment or appreciation of own competence (49 percent). Two other frequently mentioned benefits were education (26 percent) and achieving or keeping their present job (13 percent). Pay was given as a benefit by only three percent of the respondents.

Pay and promotion are crucial elements for workers experiencing very low pay and status. The CDA did not account for differences in pay (Table 10). Instead, pay increments were significantly related

Table 10
Linear Regression Analysis of Child Care Wage by Credential Status, Education and Ethnicity

Source	F	p
CDA	.89	.348
Education	4.95	.028
CDA X Education	1.01	.317
Race	.01	.905

to education. This finding indicates that pay scales based on traditional criteria are still in effect even where CDAs are employed.

One purpose of the two year design for the study was to allow for a followup interview. It was expected that differences in pay and promotion would be more likely to appear at least one year after credentialing. (Some of the CDAs earned their credentials long before the first interview, so they would have had it well over one year by the time of the second.)

The results of the second interview did not support predictions of improved pay or promotions for the CDA group. Only seven percent of all of the study's participants received a pay raise during the second year, although 76 percent were still employed in some child care occupation. CDAs were no more likely than noncredentialed persons to have received a pay raise or a change in responsibility, title, or position.

In spite of the personal satisfaction from attaining the credential, it did not appear that CDAs had a more positive perception of their work environment than the noncredentialed participants. The positive/negative ratings from the Day Care Forces Sort (Rayder, et al., 1976) were analyzed using a multivariate statistic (Hotelling's T-square) to test for positive versus negative view of the 26 elements of the child care work environment. The results of this between group comparison were not significant. The DCFS data may be interpreted as either an indication of the attitudes of the participants, or more objectively as a record of the work environments of the participants. With either interpretation of the data, the results are disappointing for those who would predict positive outcomes from the CDA credential.

The story suggested by the interview data relating to career development contains a few ironies and disappointments, just as the story about Fran which started this section. Although women may seek child care at least partially for its extrinsic benefits as a job, most of the benefits reported are intrinsic ones. The CDA credential seems to fit with this pattern. The benefits it provides are

intrinsic--a confirmation that one is a career woman, a better understanding of the relation between education and experience, et cetera. The extrinsic benefits of better pay and promotions do not seem to be an outcome of the credential.

Perhaps it is too much to expect the CDA to offer more than symbolic rewards and intrinsic satisfactions to those who attain it. Given the limits on resources in child care, programs may be unable to reward staff for evidence of competence. However, the absence of concrete outcomes may also indicate a lack of recognition of the CDA in the child care field. If the meaning and value of the credential is not understood by employers, the CDA will not earn benefits for those who hold it. This problem will be viewed from another perspective in the section on state child care regulations.

A Hypothetical Career Ladder

A career ladder provides information on career development by describing movement of persons from one role to another within an occupational structure. It may be helpful in predicting future job opportunities or in defining the skills and experiences which contribute to attainment of a particular occupation. A career ladder for child care staff would suggest whether the CDA facilitated movement to new career steps.

Because of the newness of the CDA credential, and the absence of descriptive statistics on child care as a career, the development of a career ladder was in part descriptive and in part hypothetical. This task depended on two sets of information: The observed job

experiences of participants (from their interview responses) and an analysis of the match between CDA competencies and competencies for other occupations as defined in job analysis literature.

The identification of observed career steps was based on the frequency of occupations mentioned in participants' career histories. The career histories resulted in a very complicated set of data because of the range in ages, number and kind of jobs, and education levels of the participants.

When the data for all career steps are combined (Table 11), there are few differences between the two groups of participants. Volunteering was frequently mentioned as a career step by CDAs only, perhaps reflecting the higher frequency of former Head Start parent volunteers in the CDA group.

Because there were no significant differences in overall career patterns between CDA and noncredentialed participants, the data for the two groups were combined to analyze the time order of jobs held. The frequencies for different occupations in the last four steps of the career history are given in Table 11. These data were the basis for arranging the steps on the career ladder (Figure 1). Of those observed in participants' career histories, only the child care center positions (11 to 14) represent a career ladder in the sense of a sequence of work roles within a specified occupational structure (Otto, et al., 1979). Public school teaching is only indirectly related to child care as a career. The remainder are a set of unrelated skilled and semiskilled jobs commonly held by women.

Table 11

Summary of Career History Data
Number (N) Reporting Each Occupation

Most frequent occupations by group all steps combined

CDA		Noncredentialed	
Occupation*	N	Occupation*	N
13	74	13	67
14	45	14	33
65	24	11	20
11	20	65	13
97	19	70	13
3	17	3	12
66	14	83	12
83	14	66	10
32	11	32	9
78	11	67	9

Most frequent occupations for last four career steps, both groups combined

Step 4		Step 3		Step 2		Step 1	
Occupation*	N	Occupation*	N	Occupation*	N	Occupation*	N
13	84	13	35	97	9	65	7
11	32	14	43	13	18	3	12
14	10	65	6	65	14	83	9
84	2	32	5	14	13	14	10
				82	6	83	4
						32	4

*Occupation codes:
3 = public school teacher
11 = child care director
13 = child care teacher
14 = child care aide
32 = youth worker
65 = secretary
66 = retail sales
70 = file clerk, social work
78 = facotry worker
82 = food service worker
83 = waitress
97 = volunteer

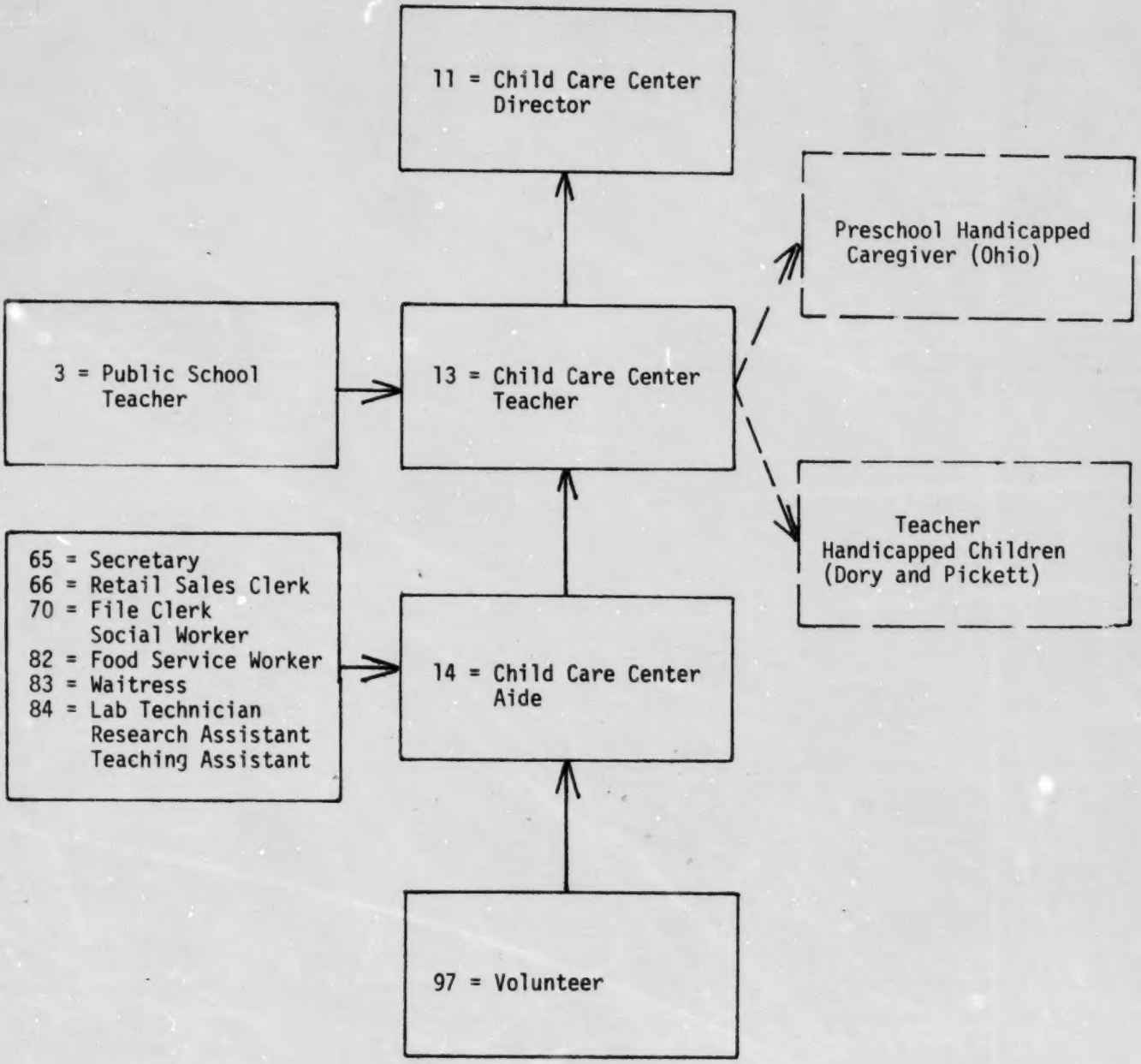
11 = Child Care Center Director
Preschool Handicapped Caregiver (Ohio)
3 = Public School Teacher
13 = Child Care Center Teacher
Teacher Handicapped Children (Dory and Pickett)
65 = Secretary
66 = Retail Sales Clerk
70 = File Clerk
Social Worker
82 = Food Service Worker
83 = Waitress
84 = Lab Technician
Research Assistant
Teaching Assistant
14 = Child Care Center Aide
97 = Volunteer

Figure 1

Hypothetical Career Ladder

The upper steps of the hypothetical career ladder represent the results of a content analysis of literature on occupations related to child care. A content analysis matches units of written documents on the basis of similarities in meaning. For the career ladder analysis, the units for analysis were competencies, skills, or behaviors listed in descriptions of jobs. An extensive search of library materials (including documents in the Educational Resource Information Center and the National Technical Information Service) covered 250 documents describing different aspects of career development in education, health and human service occupations. Of the 250 documents, only ten documents were usable for a content analysis according to the following criteria:

1. The source must describe an occupation in terms of worker skills or activities that are directly related to job elements.
2. Authors of the source must have background knowledge and represent professionals in the field.
3. At least 10 percent of the items meeting the first requirement must be related to the CDA competencies.
4. The occupation described appears to be an opportunity for improved employment status for a person working with young children and/or their families.

Several sources met all the criteria except the fourth. These sources included competency lists or job analyses which were alternatives to the CDA competence definition for the same occupation. An analysis of these sources might demonstrate the content validity of the CDA, but would not describe occupations besides those already held by child care staff.

The match between the CDA competencies and occupations described in the source documents was determined after items were sorted according to the CDA functional areas. All items were sorted even if they seemed repetitive. Finally, percentages were calculated for the number of items classified under each functional area, and the number of items which could not be classified. (When a random sample of items was resorted, 84 percent were resorted correctly.) Table 11 reports the percentages for each source included in the career ladder. The occupations from the source literature are shown on the hypothetical career ladder by broken lines (Figure 1). Each occupation is identified by name and source author, because of possible overlaps and discrepancies between sources for the same occupation.

The Ohio competency model was designed as part of a family relations/child development college curriculum for teachers of very young handicapped children. Only the behavioral competencies from this source were used in the content analysis. In addition, the source contains a lengthy list of learning activities and materials and a list of knowledge competencies which define an area of academic subject matter (Ohio, 1974). Although the CDA competencies appear to be transferable to 58 percent of the behavioral competencies, there is no basis to infer that CDA competence would be transferable to academic subject matter.

The CDA competencies also matched with 65 percent of the "primary skills" in the Dory and Pickett job analysis for caregivers of preschool handicapped children. This competency model applies to both

Table 12

Frequencies for Content Analysis of Two Competency Lists
(Percentages are in parentheses)

CDA Functional Area	Dory and Pickett	Ohio
1. Safe	3 (4)	9 (4)
2. Healthy	3 (4)	9 (4)
3. Learning Environment	1 (1)	13 (6)
4. Physical	2 (3)	3 (1)
5. Cognitive	3 (4)	14 (6)
6. Language	2 (3)	9 (4)
7. Creative	0 (1)	9 (4)
8. Self Concept	4 (5)	2 (1)
9. Individual Strength	2 (3)	13 (6)
10. Social	2 (3)	9 (4)
11. Group Management	2 (3)	7 (3)
12. Home-Center	14 (18)	14 (6)
13. Staff	13 (16)	21 (9)
Total Classified	51 (65)	132 (58)
Total Not Classified	28 (35)	96 (42)
Total Items	79 (100)	228 (100)

specialized programs for the severely handicapped and mainstreaming programs (Dory and Pickett, 1977). As might be expected, most of the items matching with CDA competencies covered the functional areas of Home-Center (working with parents) and Staff. Other matching skills applied to items on integrating the handicapped child into a group of children. There is no evidence that CDA competencies would be transferable to the specialized knowledge and skills required for particular handicapping conditions.

The number of potential career steps uncovered in the analysis is small, but the steps offered may represent real opportunities for child care staff. The implementation of federal law PL 94-142, which requires that states provide appropriate educational services for all handicapped children, seems to be creating increased demand for child care staff with specialization to work with handicapped children. The law requires that handicapped children be placed in the least restrictive learning environment possible, and thus encourages mixed grouping with nonhandicapped children. As Hirshorn and Umansky (1977) note, teachers in mixed groups should exhibit multiple competencies to respond to the broader ranges of children's abilities and needs. Although all states have special education certification for public school teachers, many children at the preschool level will be served in nonschool settings such as Head Start. The existence of competency-based models for preschool handicap teachers seems a hopeful sign both for the children and as a career possibility for CDAs.

Although they produced no usable references for the career ladder analysis, some literature on health professions suggested possible future opportunities for child care staff working in conjunction with child health programs.

The Child Health Associate (CHA) program developed in Colorado seems to offer a more direct route to employment in a health profession. The competency-based CHA training program involves two years of preprofessional training at the University of Colorado Medical Center plus one year of internship in clinical practice. The CHA works in a team with physicians emphasizing preventive care, well child care, treatment of minor illnesses, and support of the child and parents during treatment. Silver and Ott provide evidence that Child Health Associates compare favorably with medical students, interns and even pediatricians on measures related to the competencies and responsibilities defined for the CHA role (Silver and Ott, 1973).

A more realistic career ladder may be possible when CDAs have been in their careers for a longer period. The literature on job analysis of child care related occupations appears to be growing and might prove to be a more useful source of information in the future. The transfer of competencies to new occupations may require additional technical and academic training, especially for health occupations; this suggests another dimension needed in job analyses. The career ladder offered here is definitely hypothetical. It may serve as a useful framework for studying the career development of child care staff, especially for comparing men and women and for comparing staff with

different forms of career preparation and certification. By describing points of overlap between occupations, it may suggest fruitful directions for further job analysis and competency definition. It is not intended for use in career counseling or staff recruitment of child care workers.

State Licensing and Certification

The issue of state licensing and certification for child care centers and their employees is directly related to the career development potential of the CDA assessment/credential system. The recognition of the CDA by state agencies is further evidence of its value and relevance to good quality child care. More practically, recognition creates more job opportunities for CDAs. Employers are more likely to hire CDAs if this will assist them in complying with licensing requirements.

Because of their variety, complexity and number, a systematic analysis of child care licensing and certification regulations was beyond the scope of this study.[1] Instead, case studies of two states were conducted. The case study approach, while not easily generalized to all child care programs in all states, offers an understanding of the ingredients and dynamics which may contribute to a state's adoption of the CDA credential. Minnesota was chosen because the CDA is a staff qualification option for child care center licensing there.

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[1] "Licensing" usually refers to standards and sanctions applying to programs and centers. "Certification" and "credentialing" apply to persons and indicate they are qualified to work in certain types of programs.

The second state chosen was California, where the CDA is being considered as an option for child care staff certification.

Minnesota and California represent just two among many possible patterns of response by the states. The CDA credential has been adopted in some form in the regulations of 14 states (ACYF, 1977). It is being considered for adoption in others. Some states have no staff qualification provision in their regulations, so presumably adoption of the CDA would represent a major policy change. There is no evidence that any state has actively rejected the CDA as being an invalid staff qualification standard.

Minnesota: The Minnesota case study was complete in November 1979. It involved reading the licensing standards and interviewing six persons representing CDA training programs (at a state college and university), the State Department of Public Welfare (DPW), and the State Day Care Standards Advisory Committee. A time line of key events relating to adoption of the CDA credential is shown in Figure 2.

The CDA credential is one of six options to satisfy the teacher qualification requirement for child care centers serving preschool programs. Licensed centers must employ one qualified teacher for every 16 children. The other qualification options range from an emphasis on experience (3,120 hours as an assistant teacher) with minimal training (three courses or 90 hours in child development), to a college degree in child development/preschool-kindergarten or a Department of Education Nursery School teacher certificate with no

1959	At urging of professionals, teacher certification required for all programs called "schools". This certification handled by the State Department of Education.
1963	Minimal staff standards defined for non-school child care centers.
1971	Revision of child care center standards began.
1972	As the CDA assessment/credential was being developed, the State Day Care Standards Advisory Committee recommended it as a way to upgrade child care center staffing standards. CDA adopted as a standard when it was adopted by the Consortium in 1974.
1973	One of the state colleges received federal funds to develop a pilot project for CDA training.
1975	Department of Education began revision of early childhood teacher certification. Professionals in the field urged inclusion of an alternative to the four year college degree, to recognize middle level professional at work in early childhood school programs.
1978-79	Two level early childhood teacher certification under consideration: four year degree for pre-kindergarten teacher, plus two year degree (Associate of Arts) for pre-kindergarten associate.

Figure 2

Time Line, Minnesota Child Care Regulations and Policy Development

experience requirement. The CDA option has no experience or training requirement beyond that needed by the Candidate to earn the credential (Minnesota DPW, 1977).

According to those interviewed, the CDA was helpful in allowing the state to upgrade staff qualification requirements. With this option, the more stringent standards did not displace qualified people who lacked access to formal training or lengthy experience. As such, it has served to recognize the professionalism of already competent individuals working in child care, but probably has not served to increase the competence of entry level staff. Another value of the CDA has been as a model of a team approach including middle level professionals. Several respondents suggested the CDA as a factor in the acceptance of a two-level teacher certification standard by the Minnesota Department of Education (DOE). Although the CDA is not recognized by the education department's certificate, CDAs may benefit indirectly from the creation of this intermediate career step.

The theme in the history of Minnesota's response to the CDA assessment/credential system seems to be one of the cooperation between the diverse elements concerned with child development and early childhood programs, plus a strong and consistent involvement from the state level professional organization (Minnesota Association for the Education of Young Children - MAEYC). At the time the national CDA assessment/credential system was being developed (1972), one of Minnesota's consultants on the project was also head of child

care licensing in the state welfare department. She supported the recommendations of the state licensing advisory committee favoring the CDA credential. Although the committee members came from diverse professional roles and academic backgrounds, they shared a professional identity in MAEYC. MAEYC had a long term interest in promoting the professionalization of child care center staff and backed the consideration of the CDA as a licensing option. The DSW also took a leadership role in acceptance of the standards in the field, even offering orientation sessions of the CDA to child care providers.

Another important influence was probably the placement of the CDA under DSW (rather than DOE) jurisdiction, and its role in upgrading standards. In a situation where many viewed existing standards as inadequate, the CDA may have been viewed as better than (virtu. lly) nothing. Its application only to child care centers, not schools, avoided a confrontation with credentialed public school teachers. Resistance by teachers' unions to nontraditional certification was evident in the DOE's work on two-level certification for preschool teachers, and may have influenced the exclusion of CDA from the lower level certificate. The separate jurisdiction of the DPW (over child care centers) and the DOE (over preschools) allowed for CDA to be recognized for many but not all programs for preschool aged children.

California: The case study of California offers several points for contrast with that of Minnesota. The study began with an interview of a consultant in the Commission for Teacher Preparation and Licensing

(CTPL), a division of the State Department of Education. Instead of interviews with many individuals, participant observation of one meeting of the Field Based Assessment Committee of CTPL was used as the source for viewpoints from different parts of the child care profession. The Field Based Committee includes representatives from state universities, community colleges, the State Office of Child Development, child care organizations, and the CDA training contractor for California. Written documents from CTPL, a child advocacy group (On the Capitol Doorstep, 1980), the California Office of Child Development, and one agency (California Health and Welfare, 1975) supplemented the interview and observations. Figure 3 gives a time line of relevant events in California child care policy and legislation.

The focus of the policy development relating to CDA is the revision of regulations for the Children's Center Permit, a certificate required of all teachers in publicly funded child care programs. Staff certification is required in addition to licensing because the Department of Education has jurisdiction over all publicly funded child care programs. Recent revisions in the permit regulations have eliminated degree requirements while increasing requirements for child care related education and work experience. The revisions seem intended to increase options for staff with less formal education and experience.

Although the CDA was proposed in the revision process, it was strongly opposed by groups who questioned its validity and/or feasibility. As a compromise, a field-based assessment (as yet

1972 Assembly Bill 99 transferred responsibility for all public funded child care programs to Department of Education. Created Office of Compensatory Education which later became Office of Child Development. Children's Center Permit (certificate) applied to all teachers in public funded child care centers.

1973 Full state funding replaced federal subsidy for the State Preschool Program. Licensing for child care centers established under the Department of Social Services, but delegated to the Department of Education for programs it administered.

1975 State appropriated $15 million to take the place of support from the federal Title XX program for child care for low income families. This resulted in approximately half the federally supported child care centers becoming fully state funded.

1977 Revision of Children's Center Permit regulations began. Some individuals (including some state legislators) urged adoption of CDA as one alternative. Opposition to the CDA came from several groups. Advisory committee in charge of the revision recognized need to include more alternatives in regulations, but did not include the CDA.

1979 Revised Children's Center Permit regulations adopted by Department of Education, including field-based assessment option. Field-based assessment committee created to develop standards.

Figure 3

Time Line, California Child Care Regulations and Policy Development

undefined) was included as one alternative for the permit's experience requirement. The Field Based Assessment Committee of the CTPL has met for one year to review different assessments, including the CDA. It is considering the adoption of several different field based assessments which meet its guidelines. Different agencies, colleges or training programs might receive approval to conduct assessments which would satisfy the field based assessment.

While the Minnesota case was an example of high coordination, including overlapping memberships and interests, California's seems strongly pluralistic. MAEYC was mentioned by several Minnesota respondents as an advocate for particular child care standards and policies. The equivalent professional organization (California Association for the Education of Young Children - CAEYC) works alongside other organizations representing the differing viewpoints of community college early childhood educators, university teacher educators, et cetera. In addition to the different professional organizations, diverse cultural backgrounds and types of child care programs are well represented. Given the strong pluralism of the state's child care interests, agreement on a single standard may be more difficult.

The importance of the State Department of Education in child care administration may also influence the perceived value of the CDA in California. The CDA must be considered in the context of existing teacher certification standards; proponents of the CDA must deal with teachers' organizations and teacher training institutions.

Because of a unique history of child care programs and higher education in California, the CDA is not always viewed as a way to upgrade child care staff standards. It may be viewed simply as an alternative for those who cannot meet existing standards. One theme in the Field Based Assessment Committee's discussions was the problem of requiring more education for workers who are paid very little. At the same time, several members pointed to California's long leadership and financial support for child care programs. Because of pride in autonomy, professionals may resist national standards of quality which supplant local policies. Sources also pointed to the broad availability of tuition free community colleges and other staff development programs as justification for some adherence to existing requirements.

The case studies of Minnesota and California suggest several important points about career development and credentialing.

1. The acceptance of a staffing standard includes concerns about the availability of training (Can people meet the standard?) and pay and status (Can people be expected to invest in training for the rewards they will gain?). Thus the adoption of a credential in state regulations represents a compromise between professional ideals and labor market realities.
2. Professional organizations may work as special interest groups promoting definitions of "professional" and "quality" that conform to member's knowledge and values.

3. The jurisdiction of relevant state agencies is a strong contributing factor in the acceptance of a credential as a standard.
4. The incorporation of a competency based credential in licensing, rather than in certification, may avoid conflicts over the educational requirements associated with existing credentials.

The contrasts offered in this section may suggest directions for more systematic research. They are not meant to imply value judgements about the states. Rather, a functionalist interpretation is encouraged. Given the resources, administrative structure, cultural bases, and history in each state, different approaches must be expected and are probably quite appropriate.

Summary of the Results Section

The results on validity of the CDA assessment/credential system came from estimates based on performance on a written test, consistency of ratings, and some more pragmatic concerns about the meaning and value of the system. CDAs performed significantly better than noncredentialed participants on two of the six competencies in a written assessment, providing some evidence of competence in the credentialed group. Average interrater correlations of five raters using the meeting vote form of the CDA assessment were significant although not high. The evidence of consistency in ratings indicates reliable judgements may be possible with some refinements in the assessment procedure and/or functional area definitions.

The concept of pragmatic validity was proposed to include practical and humanistic factors of an assessment which may influence job placement, performance and promotion. The prediction that CDAs would report a more competent perception of self in relation to the work environment was not supported by an analysis of data from the Day Care Forces Sort. Some interview data suggested that persons' attitudes about features of the CDA assessment may be related to whether or not they attempt it. If these features have a causal role in preventing persons from completing the assessment, they may represent an implied competency for CDAs. The importance of access was also suggested by findings that supports outside the assessment system itself may help persons with the assessment. These supports included peers who also were CDA candidates, and special training resources.

The interview data on career development suggested some intrinsic benefits from the CDA credential such as self appreciation and an integration of education and experience. However, there was almost no evidence of extrinsic benefits such as pay increases or promotion. Differences in the career aspirations of the two groups were interpreted in terms of labor market factors affecting women's work, and the possible influence of age differences on the findings.

The career ladder analysis produced a hypothetical career ladder. There were no significant differences between CDAs and the noncredentialed participants in their career patterns. Besides actual child care center positions, the lower steps of this ladder included several skilled and semiskilled occupations dominated by women in

the U.S. A content analysis of job analyses for child care related occupations suggested that positions with programs for young handicapped children may be a future career opportunity for CDAs.

The case studies of two states' child care regulations relating to the CDA credential suggested several factors which may promote the incorporation of the credential. These include the jurisdiction of relevant state agencies, the state's history in child care policy development, cultural variability, and the role of child care professionals' organizations.

The limitations of the study in terms of design and methodology have been emphasized throughout the results section. The next section will discuss more general limitations of the research.

On the playground at the child care center

LIMITATIONS OF THE STUDY

Although the research findings suggest many interesting ideas about the CDA credential, none of the findings should be taken as truths which can be applied to the meaning and value of the CDA for all individual programs, or all geographic areas. Participants came from a ten state area, so that some generalizations would be appropriate. However, some aspects of the selection process and other limitations in the research design create logical problems for interpretation. A description of limitations of the study will also serve to describe some possible directions for future research.

The Need for a Benchmark for Competence

Because there is no absolute measure of competence, this research depended on many kinds of indirect evidence to determine that CDAs are in fact competent caregivers. Many readers will find fault with one or more parts of the evidence and conclusions drawn from it. The written assessment, for example, did not test performance so much as the ability to write good ideas about child care. Some of the evidence (e.g., attitudes) comes from participants' own perceptions and may be related to characteristics other than having a CDA credential.

A better approach would be to directly observe CDAs at work with children. The success of this approach would depend on finding unbiased observational measures and sufficient resources to do the expensive field research. Although the definition of competence might begin with evidence from the care experienced by children, factors in the work environment should also be taken into account. Limitations derived from the many meanings of competence are discussed in another part of this section.

The supervisor ratings did not work as an independent measure for competence. As noted in the results section, this probably was due to inadequacies in the rating form. It may also have been due to staff reluctance to give negative evaluations to a strange outsider, or to supervisors who were too overloaded with paperwork to make more discriminating ratings.

In the absence of an absolute measure for competence, the analysis of data continually depended on comparisons between CDAs and their noncredentialed peers. A severe limitation on such comparisons is the (good) possibility that competent persons are equally distributed in both groups. Until CDAs are well distributed among the population of child caregivers, or a large group of individuals who have failed the assessment will participate in a study, analysts must recognize the possibility that many noncredentialed staff are as competent as CDAs.

The Need for New Understandings on Measurement

The assumptions of traditional approaches to measurement research were often in conflict with the structure and philosophical bases of the CDA assessment/credential process. The conflict is represented by the following contrasts:

The open and consensual approach to the assessment team meeting is designed to increase information sharing and clarity in judgement.	It violates the assumption of independence between measures needed for many statistical tests, and may lead to bias between the four team members.
The competencies and functional areas are intentionally nonspecific to increase their relevance in assessing Candidates in different cultural, administrative and philosophical settings.	The lack of specific standards allows subjective judgement and makes it difficult to define an absolute criteria.
The assessment team members are chosen to represent four different points of view about the Candidate's competence.	Consistency in a rating procedure is often demonstrated by the degree to which different judges rate an individual in similar ways.

The Candidate is a member of the assessment team, and helps choose two other members, because s/he is a good source of knowledge about her performance and work setting.	Self evaluations are subjective and may lead to a "halo effect".

In addition to the statistical difficulties of estimating consistency (described in the results section), these conflicts may lead to a basic flaw which runs through the whole research. The use of research tools which are inadequate or incompatible with the philosophy of the measurement (even in the absence of better tools) may lead to faulty conclusions about the measure being studied.

The CDA as a Staff Development Model

Because the focus of this research was the CDA Consortium's assessment/credential system, the design intentionally ignored the kinds of training participants had received. The assumption was that an effective system would identify competence regardless of its source. In addition, competency based assessments were developed to eliminate the often discriminatory requirement that all credentialed persons have a specified amount and kind of training.

The findings on attitudes toward work environment, testing, and self as a worker suggest that competency based training and assessment may interact in important ways to produce competent workers. At least special training programs may provide a support system for persons attempting a novel and somewhat threatening assessment like

the CDA. In addition, training which occurs in the workplace may contribute to a sense of relevance or integration between formal learning and experience.

Instead of creating new training prerequisites for credentialing, future research could identify the elements of education, personal development and work experience which contribute to competence.

Searching (Still) for the Meaning of Competence

One limitation came from comparing two groups (CDA and non-credentialed participants) which might include equal numbers of competent people. Another comes from the difficulty of setting boundaries on a definition and standard for competence.

The CDA assessment provides each candidate with a profile sheet which records areas of strength, weaknesses, and suggestions for improvement. The assumption expressed by this practice is that even competent individuals will continue to work toward improved competence. Is competence to be used as a minimal standard, as it is now in some high school graduation requirements, or as a sign of special achievement? The interpretation of the CDA by state regulatory agencies suggests a minimal interpretation. The self perceptions of credentialed participants indicates something more.

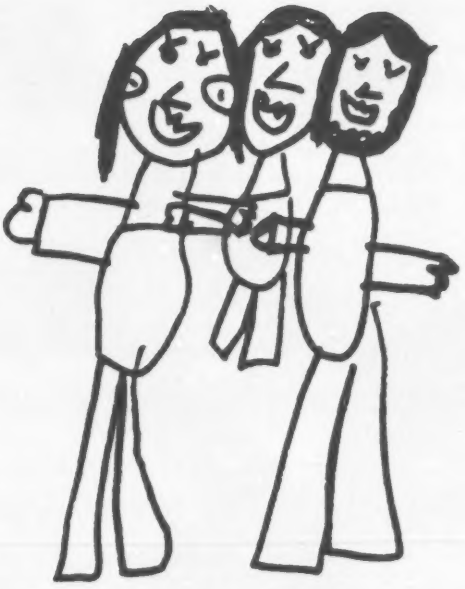
This ambiguity in the definition of competency standards creates problems in evaluating the career development potential of the CDA. Perhaps a credential which signifies successful performance in a job should not be used as the basis for promotion to a different job. Employers may interpret the credential differently; at least a few

are promoting CDAs, supposedly competent to work with young children, to be teachers and supervisors of other adults. This practice may reflect problems in personnel policies as well.

The CDA competencies are based on general descriptions of desired behavior in a given work role. The competence definition might be more meaningful if given a time dimension. In other words, the 13 functional areas represent what is expected of a caregiver after a specified number of months at work in a certain child care role. Future research might look for characteristics which would predict competent performance through different steps in a child care career. These basic characteristics (or generic competencies) could be shown to relate to the 13 CDA functional areas at one career step, but to different work related features at others.

Summary

The challenges experienced by this researcher were described in the design section of the report. My challenges to future researchers were the outcome of describing limitations to this study. The concluding section will integrate research findings with both sets of challenges to suggest some ideas which are this study's main contribution.



Mom, me, dad.

IMPLICATIONS

The CDA as a Measurement System

A clear and simple answer about the accuracy of the CDA assessment/credential system was not possible, given some contrasts between its innovative assumptions and those of measurement and statistical methods. In addition, the potential importance of the credential for staff training and job placement mandates a broader view of validity.

Within the constraints of measurement and statistics methodology, the results in this report are not impressive. A small amount of evidence suggested that CDAs may have more skill than a comparable

group of noncredentialed staff. An analysis of consistency of judgements based on the CDA assessment functional areas provided some evidence to support validity, but also suggested need for improvement.

Although these findings are not overly impressive, one may argue that they exceed expectations in at least two ways. In terms of test fairness, as mandated by Title VII, content validity has been the maximum requirement (White and Francis, 1976). The development of the CDA competencies involved many child care experts and professional groups to assure the representativeness of the standards. The findings from the National Day Care Study (Ruopp, et al., 1979) confirm a relationship between the CDA competencies and desired child outcomes.

The findings also exceed expectations by suggesting that a system incorporating multiple innovations may be valid and reliable. The combination of multiple observations based on general criteria in an uncontrolled setting would not be expected to produce high estimates of validity or reliability. A sophisticated management system and carefully designed written guidelines seem necessary to accomplish such an assessment in a child care center where three-fourths of the observers are not trained in measurement. The potential feasibility of such a system seems a fruitful direction for future research.

The findings on the pragmatic aspects of the CDA as a measurement are less encouraging. The presence of intrinsic but not extrinsic benefits from credentialing suggest that the CDA is not

recognized and appreciated by the field as a whole. It is valued by those who have experienced it directly, but it will bring no extrinsic benefits until others, especially employers, understand its purpose.

The CDA assessment/credential system includes procedures which are designed to increase cultural relevance, sensitivity and respect for the individual Candidate. These procedures reflect values which seem a part of what Katz (1977) has called the Principle of Congruity, that adults be treated according to the developmental principles they must follow in working with young children. Such congruity may offer benefits to both children and adults. It is interesting to consider what the experience of a congruous assessment may contribute to further development of competence. Although this study's findings did not support predictions about competent self perceptions, the question clearly needs further research.

Unfortunately, those features of the assessment/credential system which are intended to make it more relevant and sensitive may also limit access by potentially successful candidates. While it eliminated the familiar validity problems of pencil and paper tests, the Consortium may have substituted procedures which appear equally threatening and difficult to some child care workers. Are the skills needed to complete the assessment also ones which predict successful performance as a child care worker? Validity may depend on demonstrating a relationship between the assessment's procedural features and job tasks.

The CDA and Occupational Placement/Career Development

The career development value of the CDA credential should be considered from two perspectives. One is work related benefits gained by persons who earn the CDA credential. The other is the contribution of the CDA toward equal employment opportunity.

As noted in the first part of this section, the benefits of credentialing are more intrinsic than extrinsic. For persons who define professional in terms of the work's intrinsic value and personal demands, such intrinsic values may be very meaningful and important. However, child care staff are working hard for low pay, little status and few options for advancement. For some staff, the creation of a new credential which offers no concrete improvement in career status must seem like a rationalization for their continued exploitation.

Some researchers have suggested that while competent men will enter child care positions, the low pay makes it difficult for them to stay (Robinson, 1979 and Wright, 1977). Underlying this observation is an interaction between child care's very limited resources and women's relatively narrow occupational options. In a recent speech to California child care advocates, Richard Ruopp (Director of the National Day Care Study) noted that women subsidize child care by accepting low wages for their work. Given few choices for employment, many women will continue to provide this "subsidy".

The observations on labor market factors and child care resources are important to understanding the CDA's value. So long as resources

are very limited, it may be unreasonable to expect a credential to produce real changes in careers of child care staff. The potential value of the CDA credential must be presented with a consideration for these limited resources.

The second career development contribution of the CDA credential should be to equalize employment opportunities. The statistics on participants' wages suggest that for the employers in the research area, the CDA has not taken the place of education as an index of the value of child care staff. The case studies of two states suggest that it may be very difficult for the CDA credential to compete with existing degrees and certificates. The constituency of CDA proponents may not be as organized or long standing as teachers' organizations (e.g., AFT, 1976). In some cases, this constituency overlaps with groups favoring more traditional concepts of professionalization for child care staff.

The match of CDA competencies with those in models being developed for other child related occupations may be the basis for new career opportunities. Although the content analysis in this study produced only two sources, the literature on competency based training and credentials seems to be growing. Future indepth analyses should explore ways in which CDAs can transfer their competence to other occupations.

The significance of the CDA for occupational placement and career development is not impressive for the persons and programs covered by the study. However, the conclusions must be viewed relative to what is possible in child care at this time.

The CDA and Quality Care for Children and Families

The last set of implications on the CDA involve the principal reason for its development. Regardless of other values, the assessment/credential system is not justified unless it contributes to quality of the child's experience in group care.

The design of the CDA offers many potential benefits to children and families. Direct benefits should come from the content of the competencies and functional areas, the availability of a practical staff standard for child care programs, and the involvement of parents and community people in the assessment procedure. Indirect benefits should come from finding and keeping competent people at work in the child care center.

Unfortunately, little research has been done to measure the relationship between the intended outcomes of the CDA assessment/credential system and quality of child care. The National Day Care Study (Ruopp, et al., 1979) demonstrated a relationship between the CDA competency standards when used as the basis for a rating checklist, and some measures of child development. The checklist had no relationship to the CDA assessment procedure, however, so could not determine the assessment's accuracy in identifying competent staff.

Similarly, the results reported here provide evidence of validity without demonstrating a direct link between competence as measured by the CDA assessment and quality care. The written assessment, interviews and supervisor's rating were at best simply indirect measures of competence. Future research should observe

credentialed people at work with children. Those most affected--the children and their parents--might be asked to contribute observations for the research.

The CDA assessment/credential system is designed to evaluate persons in different child care environments. It seems unreasonable to expect competent behavior in all environments, however. Especially in view of child care's limited resources, environmental variables seem very important. Factors such as loss of program funds, staff morale problems, and changes in licensing regulations may interfere with competent performance. The meaning of the CDA credential for an individual's work performance should be viewed within such environmental constraints.

It would be very unfortunate if that same individual who subsidizes child care by foregoing better pay were also asked to carry the full burden for assuring quality child care. An overemphasis on staff qualification standards may detract from other policies which will help families meet their need for quality child care. Even within center based programs (which are just one alternative to meeting child care needs), policies relating to funding level, administrative structure, and program content and philosophy should be considered. A broader view of child care and family policies may also suggest why the CDA assessment/credential system succeeds or fails to meet its original purposes.

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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